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# The Citizen-Candidate Model with Imperfect Policy Control

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## Abstract

We examine the two-candidate equilibria of the citizen-candidate model when the implemented policy arises from a compromise between the government and an unelected external power. We show that the equilibria of this model differ significantly from the original: the distance between the candidates' policies, both ideal and implemented, remains strictly above a threshold. Thus, the median voters' ideal policy may not obtain in contested elections if policy control is imperfect, even when the cost of running as a candidate is arbitrarily small.

**Keywords:** elections, polarization, strategic delegation, bureaucracy, foreign influence

**JEL classification:** D72, D78, H11

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# 1 Introduction

The citizen-candidate model, pioneered by Osborne and Slivinsky (1996) and Besley and Coate (1997), has become a major approach to analyze representative democracy. Among the many equilibria of this model (see Dhillon and Lockwood (2002), Roemer (2003)), special attention has been granted to equilibria with two candidates. In such equilibria, a substantial cost of running for office prevents a convergence of policy platforms. Conversely, if the cost of candidacy is small the model allows for equilibria with two candidates proposing policies which are arbitrarily close to each other and to the median's preferred policy (see Persson and Tabellini (2002), p. 101-104). In the present note, we show that this latter conclusion is no longer true if the elected government cannot fully control the policy to be implemented but has to compromise with an external power. If the final policy is in between the ideal policies of the elected citizen and the external power, then in any two-candidate equilibrium the distances between the ideal policies and between the policies finally implemented by the two candidates remain strictly above a positive threshold, *even when the cost of running for office becomes arbitrarily small*.

The political importance of this result stems from the observation that quite often, elected governments have to share power with an un-elected entity. For example, a self-interested bureaucracy in the spirit of Niskanen (1971) may, by its expertise or its control on executive functions, 'water down' implemented policies. Similarly, an interest group<sup>1</sup> which has the means to disrupt public life, such as a union or an industry association, can influence the policies effectively enacted by the government. As a third example, in developing countries even elected governments often feel compelled to take the views of donor countries into account when formulating domestic policies. Finally, when the International Monetary Fund or, recently, the European Union negotiate economic programs with countries receiving debt relief, the resulting policies clearly arise as a compromise between the preferences of the elected government and those of the international institution. For these and similar situations, our result implies that a polarization of candidates and policies is inevitable.

To arrive at this conclusion, we present a simple model where citizens have single-peaked preferences over an unbounded one-dimensional policy space, decide non-cooperatively whether to stand in an election, and vote strategically for one of the candidates. To for-

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<sup>1</sup>Besley and Coate (2001) study the influence of lobbying in a citizen-candidate model. However, since the government has full control over the policy in their model, they do not obtain our result.

malize the influence of the external power, we assume that the final policy is a weighted average of the winner's ideal policy and the external power's preferred choice. We show that the ideal policies of two candidates running in an equilibrium, and also the policies finally implemented in case of victory, must differ by a minimum amount. This minimal distance increases in the strength of the external power and in the difference between the median voter's and its preferred policies, but is independent of the cost of candidacy. This result obtains since otherwise, if two candidates with similar preferences were to run, one of them would prefer the compromise between the other candidate and the external power to the compromise she can obtain herself.

Our analysis is in line with several other contributions which show that adding institutional features to the standard citizen-candidate model can cause the candidates' policies to diverge. Thus, Chambers (2007) provides a model where lobbies pay campaign contributions to potential candidates so as to convince them to run. He shows that this induces a minimum distance between the policies chosen in two candidate equilibria. Our approach differs from this result in that we consider an external power which influences the policy after the election, rather than manipulating the election itself. It has also been shown that ideal policies in a two-candidate equilibrium must be sufficiently far apart if the final policy is a weighted average of the ideal policies of all candidates (Hamlin and Hjortlund (2000)), or if the decision to stand in the election must be taken before the distribution of voter preferences is known (Brusco and Roy (2011)). Both Hamlin and Hjortlund (2000) and Brusco and Roy (2011) assume sincere voting, and the driving force behind the divergence results is the threat of a third candidate entering on the fringe of the political spectrum. Contrary to that, in our model, which is based on strategic voting, it does not pay off for the second candidate to enter if policies are too close to each other. Thus, while these contributions arrive at similar conclusions, our result is based on a fundamentally different effect.

Our result also contributes to the theory of strategic delegation in a political context. This strand of literature emphasizes that the median voter, by electing someone with preferences different from herself, can compensate for unwelcome influences in the post-election decision making, and thereby implement her preferred policy. For example, Persson and Tabellini (1992) show that electing a citizen who likes higher taxes than the median is a way to counteract the race to the bottom endemic in tax competition. Similarly, Roelfsema (2007) shows that strategic delegation can overcome the free-riding incentives present when countries set environmental standards in an uncoordinated way. In an inter-temporal set-up, electing a citizen with a high endowment of capital is a way

to commit to a low tax rate on capital, thereby preserving incentives to invest (Persson and Tabellini (1994)). Other applications of strategic delegation refer, for example, to joint production of a public good (Harstad (2010)), to monetary policy in the European Central Bank (Fatum (2006)), or even to civil conflicts (Jennings and Roelfsema (2008)). One-candidate equilibria of our model are perfectly in line with these results: Provided the cost of candidacy is not too high, there is always an equilibrium where the final policy coincides with the median's preferred choice. Contrary to that, in any two-candidate equilibrium, the final policies remain bounded away from the median's ideal policy, even for arbitrarily small cost of running for office. Thus, our result shows that the power of strategic delegation is limited as long as one considers equilibria where elections are indeed contested.

## 2 The Model

There are  $n$  citizens with  $n$  odd. Each citizen has single-peaked preferences over a unidimensional policy  $p \in \mathbb{R}$ . The ideal policy point of a citizen  $i$  is denoted by  $p_i$ . The median voter's ideal policy is denoted by  $p_m$ .

There are three stages. In the first stage, each citizen decides whether to stand for election or not. Being a candidate costs  $c > 0$ . In the second stage, voting takes place according to the plurality rule. In case of a tie, every candidate which ties for the first place is selected as the winner with equal probability. In the third stage, if citizen  $i$  is the winner of the election, then the final policy  $p_{ix}$  is a weighted average of her ideal policy ( $p_i$ ) and the ideal policy of an external power ( $p_x$ ):

$$p_{ix} = \gamma p_i + (1 - \gamma)p_x \tag{1}$$

with  $0 \leq \gamma \leq 1$ . If no one runs for the election, then the final policy becomes  $p_x$ .

The formula of the final policy captures the idea that, ideally, the election's winner would like to implement her most preferred policy, but has to compromise with the external power.  $1 - \gamma$  measures the power of this un-elected entity.

The equilibrium concept is subgame perfect equilibrium together with the elimination of weakly dominated voting strategies. From Proposition 3 in Besley and Coate (1997) we know that a two-candidate equilibrium, which is the focus of the present note, exists only if (a) both candidates attract an equal number of votes, and (b) for both candidates, the gain in expected utility arising from changing the final policy with

probability  $1/2$  outweighs the cost of running.<sup>2</sup>

Making use of the necessary conditions (a) and (b), our result characterizes the set of candidate pairs which can be observed in a two-candidate equilibrium.

**Proposition 1.** *In any equilibrium with two candidates  $i$  and  $j$ ,  $|p_i - p_j| > \frac{1-\gamma}{\gamma} |p_x - p_m|$ .*

**Proof:** Note that  $p_i \neq p_j$ , since otherwise one of the candidates would be better off not running for the election and saving the cost  $c$ . Assume without loss of generality that  $p_j = p_i + d$  with  $d > 0$ . With (1), this implies  $p_{jx} > p_{ix}$ . The key observation is that  $p_j > p_{ix}$ , since otherwise  $j$  would prefer  $p_{ix}$  to  $p_{jx}$  (due to single-peaked preferences) and would be certainly better off not running for the election (even with  $c = 0$ ). This can be equivalently written as

$$p_i + d > \gamma p_i + (1 - \gamma)p_x$$

which gives

$$d > (1 - \gamma)(p_x - p_i) \tag{2}$$

As it is well known, in a two-candidate equilibrium, two candidates should tie. Due to single-peaked preferences this is possible only if  $p_{jx} > p_m > p_{ix}$ . By substituting equation (1) for  $p_{ix}$  into  $p_m > p_{ix}$  and rearranging, we get:

$$p_x - p_i > \frac{p_x - p_m}{\gamma}$$

Combining this with inequality (2) gives

$$d > \frac{1 - \gamma}{\gamma} (p_x - p_m) \tag{3}$$

In the same way, using the inequalities  $p_i < p_{jx}$  (since otherwise  $i$  would be better off not being a candidate) and  $p_{jx} > p_m$ , it can be also shown that

$$d > \frac{1 - \gamma}{\gamma} (p_m - p_x) \tag{4}$$

Inequalities (3) and (4) together complete the proof. *Q.E.D.*

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<sup>2</sup>Besley and Coate (1997) also show that the necessary conditions (a) and (b) together are sufficient for existence of a two-candidate equilibrium if in addition, (c) all voters strictly prefer the candidate they vote for to the other candidate and the set of indifferent voters is smaller than one third of the electorate.

Proposition 1 says that it is not possible to have two candidates whose ideal policies are at a distance lower than  $\frac{1-\gamma}{\gamma}|p_x - p_m|$  from each other, even if the cost of running as a candidate is arbitrarily small. While this result relates only to the ideal points of the candidates, the next corollary, which follows directly from Proposition 1 and equation (1), shows that also the two potential final policies are distant from each other by at least  $(1 - \gamma)|p_x - p_m|$ .

**Corollary 1.** *In any equilibrium with two candidates  $i$  and  $j$ ,  $|p_{ix} - p_{jx}| > (1 - \gamma)|p_x - p_m|$ .*

### 3 Comments and Conclusion

*The “standard” case with perfect policy control.* If we set  $\gamma = 1$  in (1), then the politician implements her ideal policy and we have the standard citizen-candidate model. In this case it is easy to construct examples of two-candidate equilibria displaying arbitrarily close distance between the two candidates, by choosing a sufficiently small cost of running and an appropriate distribution of citizens’ ideal policy points.<sup>3</sup> However, if  $\gamma < 1$ , Proposition 1 tells us that any two candidates running must have substantially different ideal points, and that also the two potential final policies diverge from each other by a non-negligible amount. Put differently, our result shows that the presence of the external power precludes convergence of platforms and final policies in two-candidate equilibria of the citizen-candidate model.

Moreover, since the median’s preferred policy must be located between the policies implemented by the two potential winners, in the standard model the two-candidate equilibrium provides an institutional framework for (almost) implementing the median’s preferences. Contrary to that, when an external power influences the policy outcome, at least one of the final policies necessarily stays bounded away from the median preferred policy, no matter how small the cost of running is.

*One-candidate equilibria.* If we consider one-candidate equilibria, then our model produces similar results to the “standard” model: if there is a citizen  $i$  who compensates the external power’s policy influence in such a way that the final policy becomes (almost)

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<sup>3</sup>For instance, if voter  $m$  is indifferent between  $p_i$  and  $p_j$  and half of the remaining  $n - 3$  voters respectively have ideal policies smaller than  $p_i$  and larger than  $p_j$ , then a two-candidate equilibrium with  $i$  and  $j$  running exists whenever the cost of running is small enough.

the median voter's ideal policy (i.e.  $p_{ix} = p_m$  or arbitrarily close to it) then this citizen  $i$  running unopposed constitutes a one-candidate equilibrium (given the cost of entry is appropriately small). Even though citizen  $i$  is not the median voter, the final policy is close to the median-voter's ideal. But this result does not hold if we consider two-candidate equilibria. In the latter case, as Corollary 1 shows, *it is not possible for the median voter to fully neutralize the influence of the external power by strategic delegation.*

To summarize, this note shows that the citizen candidate model implies a divergence of ideal policies between candidates, and of final policies implemented from the preferences of the median, if one considers equilibria with two candidates running for office and if the final policy arises from a compromise between the elected government and some un-elected entity such as a bureaucracy or foreign influences. Thus, while the median voter result provides a useful benchmark in many political economic analyses, it may be misleading if such an outside influence is relevant and elections are contested.

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